

CLAIMS

1. A method of producing a digital certificate during which a certification authority groups together, in a data set, a public key and digital data comprising data identifying the proprietor of the said public key and of an associated private key, and then signs the data set in order to produce a digital certificate,

the method being characterised in that the digital data also comprise data identifying means of generating the private key and/or means of storing the private key on a medium and/or means of signing with the private key.

2. A method according to claim 1, in which the data identifying the means of generating the private key comprise data identifying:

- a method of generating the private key and/or
- hardware on which the method of generating the private key is implemented, and/or
- a place on which the method of generating the private key is implemented.

3. A method according to claim 1 or 2, in which the data identifying the means of storing the private key comprise data identifying:

- a method of storing the private key on a medium, and/or
- hardware on which the method of storing the private key is implemented, and/or

- a place on which the method of storing the private key is implemented, and/or

- a storage medium on which the private key is stored.

5 4. A method according to one of claims 1 to 3, in which the data identifying the signature means comprise data identifying:

- a signature method using the private key,
- a memory medium on which the said signature

10 method is stored.

5. A method according to one of claims 2 to 4, in which the data identifying hardware or a storage medium comprise:

- a reference identifying the said hardware or

15 the said storage medium, and/or

- an identification of a manufacturer of the said hardware or of the said storage medium, and/or

- an indication of a security level of the said hardware or of the said storage medium defined

20 according to a standard ISO 15408.

6. A method according to one of claims 2 to 5, in which the data identifying a method comprise:

- a reference identifying the said method, and/or

- an identification of an inventor of the said method, and/or

25

- an indication of a security level of the said method according to ISO 15408.

7. A method according to one of claims 2 to 6, in which the data identifying a place comprise:

- an identification of the said place, and/or
 - an identification of a security level of the
- 5 said place according to ISO 15408.

8. A digital certificate comprising:

- a public key,
 - data identifying a proprietor of the public key and of an associated private key, and
- 10 • data identifying means of generating the private key and/or means of storing the private key on a medium and/or means of signature with the said private key.

9. A certificate according to claim 8, of the

15 X509 type according to a standard Information Technology - Open Systems Interconnection - The Directory : Public Key and Attribute Certificate Frameworks, dated March 2000, of the International Telecommunication Union, in which a set of predefined

20 free fields are used to store the digital data identifying:

- a method of generating the private key, and/or
 - hardware on which the method of generating the private key is implemented, and/or
- 25 • a place on which the method of generating the private key is implemented, and/or
- a method of storing the private key on a medium, and/or

- hardware on which the method of storing the private key is implemented, and/or

- a place on which the method of storing the private key is implemented, and/or

5 • a storage medium on which the private key is stored, and/or

- a signature method using the private key, and/or

- a storage medium on which the said signature method is stored.

10 10. A method of using a digital certificate according to one of claims 8 or 9, comprising the following steps consisting of:

- receiving a message signed with a private key,

15 • reading, in the digital certificate, data identifying means of generating the private key and/or means of storing the private key on a medium and/or means of signing with the private key,

20 • deducing therefrom a probability of the said private key having been used by a legitimate proprietor of the said private key,

- according to the said probability, accepting or refusing the electronic message.

25 11. A method according to claim 10, in which the message is accepted solely if the probability of the said key having been used by its legitimate proprietor is greater than a predefined value.

12. A method according to claim 10, in which:

- the message is accepted if the probability is greater than a first value (VB1),

- a confirmation of the said message is requested if the probability is between the first value (VB1) and a second value (VB2) less than the first value, and

5 • the message is refused if the probability is less than the second value (VB2).